Lipoid Pneumonia: Rare Cause of Pulmonary Fibrosis in Young Person

Syed Mahmood ul Haq[1], Jawed Ahmed Memon[1], Mariya Muhammad Saleem[1*], Rimsha Ashqeen[1] and Shayan Anwar[1]

[1]*Department of Thoracic Surgery, Liaquat National Hospital & Medical College, Karachi, Pakistan*

Abstract

Aspiration of lipid particles into the lungs results in the underdiagnosed condition known as lipoid pneumonia. Although the majority of recorded instances have been linked to the use of laxatives like mineral oil, the condition can also be brought on by other lipids. Here, we present a rare cause of pulmonary fibrosis in young adults.

Keywords: *Pneumonia, lipid, baby oil, lipoid pneumonia.*

INTRODUCTION

Exogenous lipoid pneumonia (ELP) is a very uncommon type of pneumonia brought on by lipid inhalation or aspiration. Petrolatum, mineral oil, "intranasal drops," and even intravenous olive oil injections have all been linked to ELP [1] or at least slowed down by exposure to lipids that interfere [2]. We describe a 45-year-old male patient with cough symptoms. He was initially diagnosed with sarcoidosis and bronchial hypersensitivity.

He had an open lung biopsy, a fibre optic bronchoscopy, and a chest computed tomography. It was determined that he had lipoid pneumonia. When queried about fatty substance intake, the patient admitted to regularly consuming baby oil. After stopping the substance, his symptoms improved.

CASE REPORT

In the case presented here, a 45-year-old man with a cough and shortness of breath but no other co-morbid disorders was referred to our specialty for a lung biopsy. He was initially diagnosed with bronchial hyperresponsiveness and sarcoidosis. The patient was treated for sarcoidosis but the cough persist and due to the persistent cough, He was advised further workup.

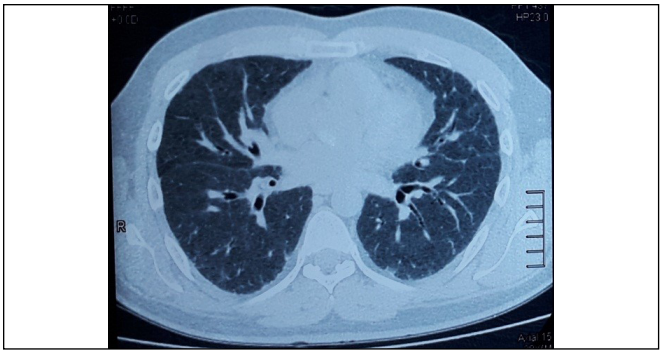

Fig. (1): CT- scan (2018) showing bilateral lung infiltrate.

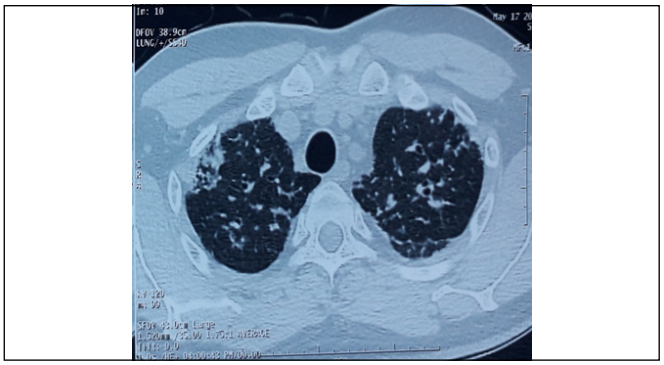

Fig. (2): CT-scan (2019) showing progression of disease.

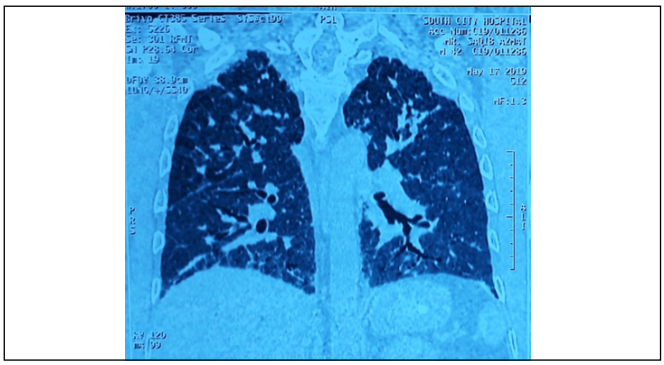

Fig. (3): Same as (Fig. 2 transverse cut).

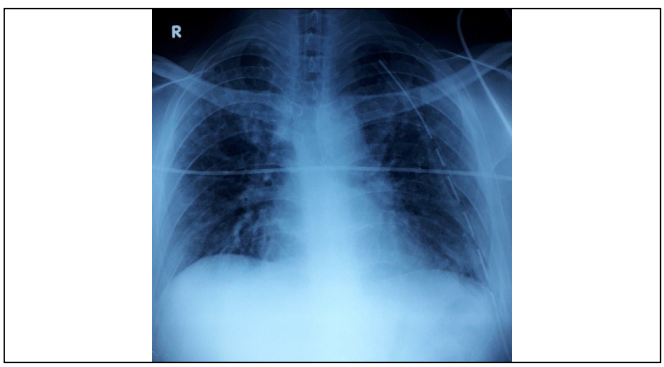

Fig. (4): Postoperative Chest X-ray.

**Corresponding author: Mariya M. Saleem, Plot No. 898 – C, 4th Floor, Near Bilal Hotel, P.E.C.H.S., Block 2, Karachi, Pakistan;*
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His CT scan revealed bilateral lung infiltrates (**Figs. 1-3**). He underwent for video-assisted thoracoscopy and lung biopsy of the lingula and left lower lobe. The postoperative course was uneventful (**Fig. 4**).

The diagnosis of lipoid pneumonia was made based on histological analysis of the biopsy specimen, which revealed fibrosis at the subpleural level, scarred tissues, dense inflammation, widely distributed cholesterol-trapping cleft, and foreign body giant cells in blood vessels and interstitium. Further inquiry revealed that the patient used baby oil every day to combat dry skin and hair, leading to the diagnosis of ELP brought on by long-term incorrect baby oil use. Partial regression of symptoms followed discontinuation of the use of baby oil.

DISCUSSION

LP is an unusual and little-known entity. According to the origin of the lipids, it is typically divided into three groups: exogenous, endogenous, and idiopathic if no cause is identified [3].

Endogenous LP often referred to as “cholesterol” or “golden” pneumonia, occurs when the alveolar cells fail to degrade the lipids found in the surfactant, which are typically found in the lung tissue. Endogenous LP has several known causes, such as lipid storage disorder, lipoproteinosis, and fat embolism [4].

Exogenous lipoid pneumonia brought on by inhaling mineral or vegetable oil has a pathophysiology similar to that of a foreign body reaction in the lung. Alveolar macrophages emulsify and phagocytize the aspirated oil before delivering it to the interlobular septum through the lymphatic channels. As a result, certain alveoli are damaged and the alveolar walls thicken. Fibrotic proliferation can eventually result in a reduction in lung capacity. The majority of the oil condenses to create a tumorous mass called a paraffinoma, which is a massive mass of fat encircled by fibrous tissue and enormous cells. Diffuse parenchymal consolidation brought on by repeated large aspiration resembles lobar pneumonia. Intensive lung architectural damage may result in either terminal lung disease or cor-pulmonale [5].

Symptoms of lipoid pneumonia are similar to those of other lung diseases such as bacterial pneumonia, tuberculosis, and lung cancer. As a result, lipoid pneumonia can be difficult to diagnose [6].

Alveolar consolidation with low attenuation values, ground-glass opacities with intralobular septal thickening (crazy paving pattern), or alveolar nodules are the characteristics that are most frequently described. Granulomatous giant cell reaction, also known as lipid granuloma, persistent inflammation, alveolar fibrosis, and interstitial tissue is its pathological features. Bronchoscopy and alveolar lavage (BAL), fine-needle aspiration cytology (FNAC), or lung biopsies are all necessary for the diagnosis of LP [7]. Lipidomic lipoid pneumonia is sometimes unaware of aspiration episodes [8].

Treatment of LP is understudied, and experience is limited to case reports. The mainstays of treatment are avoiding prolonged exposure and providing supportive care [9]. Corticosteroids ought not to be utilized consistently; however, they can be utilized on the off chance that lung harm is serious and progressing. Lipoid pneumonia is usually mild, but it can worsen. Chronic, debilitating illness and exposure to mineral oil are risk factors for disease progression [10].

CONCLUSION

Due to the non-specific nature of the symptoms, indications, and radiographic findings, exogenous lipoid pneumonia is frequently challenging to diagnose. To correctly identify ELP, it is crucial to have a thorough medical history and a histological diagnosis. Regression of the disease depends on treating ELP while completely avoiding the disease-causing substances.

DECLARATION OF PATIENT CONSENT

We received informed written consent from the patient for the publication of this case report and accompanying images.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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None.

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